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Spaceport News

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http://www-pao.ksc.nasa.gov/kscpao/snews/snewstoc.htm John F. Kennedy Space Center

KSC hears NESC plans for return to flight

Following the release of the Columbia Accident Investigations Board's final report, NASA has issued its "Implementation Plan for Return to Flight and Beyond" as a response to the report.

The Agency has also established the NASA Engineering and Safety Center (NESC) at Langley Research Center to address safety concerns. The NESC rolled out to several hundred civil service and contractor personnel at KSC's Training Auditorium and thousands more via NASA TV, Sept. 8, during a presentation by Ralph Roe, special assistant to Langley Center Director Roy D. Bridges.

"NASA's Implementation Plan for Return to Flight and Beyond" is the Agency's blueprint for acting on the recommendations from the CAIB and safely returning to flight. This will also help guide the Space Shuttle Program.

The CAIB issued 29 recommendations; the plan addresses every one of them. In addition, the plan reflects what NASA has been working on since March on other return to flight issues identified earlier by the Shuttle program. Other portions of the plan represent corrective measures above and beyond any CAIB recommendations.

Ralph Roe, special assistant to the Langley Center Director Roy D. Bridges, explains the function of the new NASA Engineering and Safety Center.

NASA considers the implementation plan to be a living document that will be periodically updated and will guide our efforts toward addressing the CAIB findings and the safe return to flight. The following are partial excerpts from the plan. The complete Implementation Plan can be viewed at: **http://www.nasa.gov.**

Key CAIB Findings

The CAIB focused its findings on three key areas:

• Systemic cultural and organizational issues, including decision making, risk management, and communication;

• Requirements for returning safely to flight; and

• Technical excellence.

Changing the NASA Culture

NASA will pursue an in-depth assessment to identify and define areas where we can improve our culture and take aggressive corrective action. In order to do this, we will:

• Create a culture that values effective communication and empowers and encourages employee ownership over work processes.

• Assess the existing safety organization and culture to correct practices detrimental to safety.

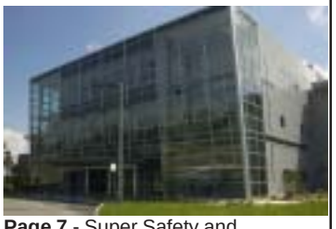
• Increase our focus on the human element of change management and organizational development.

Returning Safely to Flight

The physical cause of the *Columbia* accident was insulation foam debris from the External Tank left bipod ramp

(See RETURN, Page 8)

Inside



Integrated testing successful on ISS modules

The Multi-Element Integrated Test (MEIT) of the Node 2 and Japanese Experiment Module (JEM) Kibo Pressurized Module (PM) was successfully completed in the Space Station Processing Facility (SSPF) this month.

The completion of the test on the two elements, which will eventually be delivered to the International Space Station, marked the conclusion of a process that was many years in the planning and pretesting stages prior to their arrival at the SSPF.

The complexity of the MEIT, only the third integrated test of

(See TESTING, Page 6)

The test team comprised members from NASAís Marshall Space Flight Center, Glenn Research Center, Johnson Space Center and Dryden Flight Research Center in addition to the NASA and Boeing team members at KSC.

Jim Kennedy
Center Director

The Kennedy Update

I'd like to start today's column by formally welcoming Dr. Woodrow Whitlow to KSC, serving as our new deputy center director. I feel very fortunate to have Woodrow on our team. He brings a wealth of experience and knowledge from the Glenn Research Center and a leadership ability that is second to none.

During his first few weeks, he's planning to visit each directorate, so please extend a hand and welcome him aboard. He is excited to be here and I know he'll enjoy working with the finest space team in the world.

With the release of the Columbia Accident Investigation Board report, our Agency is focused on returning the Shuttle safely to flight. This is for good reason since it's NASA's and KSC's number one priority. As the Return to Flight Implementation Plan states, "NASA accepts the findings of the CAIB, we will comply with the Board's recommendations, and we embrace the report and all that is included in it."

This is an extremely powerful statement that very clearly displays our commitment to being an Agency on the way to becoming "smarter, stronger, safer!" While working the RTF plan is very important, I want to assure you, it's not at the expense of everything else.

I'm fully aware that much more than Shuttle processing and related RTF work takes place at KSC. I meet with all the directors as a team twice a week and with most, individually, at least once a week.

For example, I'm very aware of all the hard work taking place in our financial world as they prepare to "balance the books" to close out the fiscal year. If that isn't enough, in only 12 days NASA implements full cost accounting across the Agency. I'm sure there is a learning curve waiting for all of us, and our "friends in finance" will help us anticipate and solve any problems with the new system.

For the past month, our human resources folks have been rolling out the Human Resources Capital Plan for the Center and are making great strides in ensuring the long-term health of our work force.

This is a very important effort considering today's budgetary realities and the tough challenges any organization faces to retain talented people. Our human resources professionals ensure we all receive the proper training to reach our career growth potential.

Both contractors and civil servants are involved in these efforts, which shows how much of a team we really have here at KSC.

This teamwork extends to the area of vital special projects as well. One example you will hear more about in the near future is the KSC Combined Federal Campaign led by Susan Kroskey and her team of volunteers. Many charitable agencies rely on the contributions of this campaign, and YOU for their very survival. Our team is impacting lives in a way that will be felt by the people involved for a lifetime.

Another example is Conrad Nagel and his team planning our annual Spaceport Super Safety and Health Day, which will be held on Oct. 15. Their efforts ensure we never forget our most important asset at KSC is our people - whether civil servant or contractor.

Every person here is an important and valued member of our team. Ensuring we all show up to work healthy every day and work in a safe environment is the responsibility of us all. Conrad's team is leading the charge.

I could go on and on, but I won't. My point is whether you work in operations, technology or an enabling function at KSC, whether civil servant or contractor, I know there is tremendous work taking place across the Center on a daily basis. I appreciate it all and admire everyone's professionalism and dedication to duty.

Have a great week!!

Discovery modifications are successful

Shuttle Program Manager Bill Parsons, right, is briefed on Orbiter Major Modifications (OMM) that were recently completed on Space Shuttle Discovery. From left are a Boeing representative; Bill Pickavance, vice president and deputy program manager, Florida operations, United Space Alliance (USA); and Mark Nappi, deputy associate program manager, ground operations, USA. The OMM work ranged from wiring, control panels and black boxes to gaseous and fluid systems tubing and components.

In the Orbiter Processing Facility, the processing team applaud the successful power-up of the orbiter Discovery. The vehicle has been undergoing Orbiter Major Modifications, in which systems were deserviced, disassembled, inspected, modified, reassembled, checked out and reserviced, as were most other systems onboard. The work includes the installation of the Multifunction Electronic Display Subsystem (MEDS) ñ a state-of-the-art glass cockpit.

Recognizing Our People

Employee rewarded by Kennedy for heroic act

Leaping from a vehicle, smashing out a drowning car's window while sustaining injuries and rescuing an imprisoned woman may sound like a suspenseful movie scene, but this is exactly what KSC employee Jim Langenbach selflessly did Aug. 22.

On her way to visit relatives, artist and homemaker Natasha Gary drove down S.R. 405 toward Merritt Island. Just prior to reaching Space Commerce Parkway, she lost control of her Ford Tempo and plunged into a roadside canal. Langenbach, a few cars behind, witnessed the horror and rushed to Gary's rescue.

Without considering his personal well-being, he grabbed a crescent wrench from his vehicle and smashed the car's rear window. For his efforts, Langenbach did endure some injuries requiring stitches.

Security officials and Gary herself believe she survived because of his heroic actions. Gary wrote KSC Center Director James Kennedy to express her feelings about the accident and asked that Langenbach receive recognition for his bravery. "I'm thankful to God, thankful Jim Langenbach was there that day. I could see other men standing around, but he was the only one who took action," she explained.

Above, Center Director Jim Kennedy awards his first Gold Coin to KSC employee Jim Langenbach. At right, Langenbach received a painting from Natasha Gary for his bravery.

Kennedy, determined to present Gold Dollar Awards to individuals demonstrating KSC's core values, agreed that Langenbach's actions were exceptional. On Sept. 3, Langenbach's wife, Mr. and Mrs. Gary, KSC management and co-workers witnessed Kennedy present Langenbach with his hard-earned Gold Dollar. Following the presentation, Gary gave her rescuer a picture she painted.

To avoid similar, possibly fatal incidents, Gary encourages people to avoid distractions while driving. She can offer this expert advice because her accident occurred while she was reaching for a ringing cellular phone.

"In my role as center director, one of the wonderful things I get to do is to recognize employees for acts or services that demonstrate an adherence to Agency and Center core values," said Kennedy.

"I was honored to award my first Gold Dollar to Jim Langenbach for his bravery in rescuing Natasha Gary from her car after it had plunged into a canal. Langenbach's fearless act exemplifies the behavior that epitomizes our human obligation to act appropriately and decisively when someone's life is in danger. He is an inspiration to us all."

August Employees of the Month

Back row from left: Billy Wilson, Information Technology and Communications Services; Jeffrey Wallace, Chief Financial Office; Frank Valdez, Launch Services Program; Hung Nguyen, Shuttle Processing; Curtis Martin, Space Shuttle Launch Integration; Chuong Nguyen, ISS/Payload Processing. Front row from left: Lori Thurow, Spaceport Engineering; Pat Lynn, Spaceport Technology; Cassandra Black, External Relations and Business Development.

September Employees of the Month

Back row from left: Leila Taylor, Spaceport Services; Richard Sharum, Information Technology and Communications Services; Lori Weller, Cape Canaveral Spaceport Management Office (Air Force employee). Front row from left: Lisa Smith, ISS/Payload Processing; Zoe Ruedele, Shuttle Processing; Sheryl Koller, Spaceport Engineering and Technology. Not shown: Tracy Lee Belford, Office of the Chief Counsel; John Vondenhuevel, Procurement Office; David Sollberger, Launch Services Program.

Space Life Sciences Laboratory set for opening

From blueprints on paper to a work in progress, construction of NASA's Space Life Sciences Laboratory, formerly the Space Experiment Research and Processing Laboratory at Kennedy Space Center is now complete, and the facility is ready for its new occupants.

Since the facility's groundbreaking ceremony in early 2001, the NASA community, scientists, and state and local agencies have watched as construction progressed on the distinctive 104,000-square-foot facility that will support NASA's Life Sciences Services Contract.

"I am gratified to see the Space Life Sciences Laboratory open for business," said Jim Kennedy, center director. "This is a hallmark of the relationship between the state of Florida and NASA, and celebrates a strong partnership that combines a state-of-the-art facility with world-class researchers to perform space-related research and provide spaceport technology that will have international applications."

More than two dozen distinct laboratories will support a broad range of scientific disciplines including biotechnology, effects and uses of microgravity, space agriculture, microbial ecology and conservation biology.

John Sager, Ph.D., of NASA's Biological Sciences Office at KSC said, "The Space Life Sciences Laboratory will match the established world class expertise of the Biological Sciences research and engineering staff with a facility capable of supporting the advancement of the Agency's goals. It will enable collaborative biological research within Florida and experiment processing for a worldwide clientele."

Completed and ready for a ribbon cutting ceremony in October, the new Space Life Sciences Laboratory (formerly the Space Experiment Research and Processing Laboratory, or SERPL) will combine a state-of-the-art facility with world-class researchers to perform space-related research and provide spaceport technology that will have international applications. At right is the entrance to the Space Life Sciences Laboratory. Biological experiments bound for the International Space Station, as well as other ground-based research, will be designed, built, and/or tested within the laboratories.

According to Charlie Quincy, chief of the Biological Sciences Office for Spaceport Engineering and Technology, the facility will be occupied by NASA's life sciences contractor, Dynamac, who will move from Hangar L at Cape Canaveral Air Force Station to the new facility very shortly. NASA researchers and researchers from the University of Florida will also occupy the building.

Inside the life sciences laboratories, scientists and researchers will investigate and search for answers to several questions including: How does life respond to gravity and the space environment? What new opportunities can research bring to expand our understanding of the laws of nature and enrich lives on earth?

What technology must we create to enable the next explorers to go beyond where we have been? Engineers will work with the science community to convert science potential into experimental opportunities.

Biological experiments bound for the International Space Station, as well as other ground-based research, will be designed, built, and/or tested within the laboratories.

While part of the building will be occupied by NASA and contractor staff, the Florida Space Research Institute will manage part of the building and facilitate its use by university and commercial researchers interested in occupying a portion of the laboratory and office space.

Japanese space agencies changing name to JAXA

In May, an announcement was made to merge the three Japanese aeronautical and space agencies, including The Institute of Space and Astronautical Science, the National Aerospace Laboratory of Japan, and the National Space Development Agency of Japan (NASDA) into one new agency.

Effective Oct. 1, those three agencies will become the Japan Aerospace Exploration Agency (JAXA). JAXA represents Japanís enthusiasm for exploration, research and development.

JAXA
Japan Aerospace Exploration Agency

Langley using KSC as base for lightning study

The stormy afternoon skies of Florida's Space Coast are taken for granted by those who live near Kennedy Space Center, but the Aviation Operations and Evaluation Branch at Langley Research Center is using it as an opportunity to improve aircraft safety.

The Correlation of Radar Reflectivity and Lightning Study (CoRRaL) is taking advantage of Florida's volatile late-summer weather to test existing severe weather detection equipment, with the hopes of improving the technologies used in future small aircraft avionics.

"We're testing lightning and radar products to develop follow-on data-link products for small aircraft," said CoRRaL project pilot Charlie Cope.

The concept is based on real-time uploading of information to aircraft, instead of relying on expensive independent equipment being installed in each aircraft.

Correlation of Radar Reflectivity and Lightning Study (CoRRaL) researcher Katherine Lemos uses a B-200 aircraft to correlate how onboard aircraft lighting detection compares with ground-based lightning detection.

The ground-based Lightning Detection and Ranging system at KSC is among the most comprehensive in the world, and project managers are using that system to pinpoint strikes in real time. The data will be compared with information collected by visual observers on the Cape, as well as onboard storm detection equipment on a B-200 aircraft provided by Langley.

"It's equipped with the latest state-of-the-art commercially available radar and data-link products, as well as a lighting detection and storm scope," said Cope.

"We're able to use that current technology to compare it with the ground-based lightning detection equipment at KSC, to correlate how the onboard aircraft lighting detection compares with ground-based lightning detection, and how they predict thunderstorms."

The Shuttle Landing Facility is serving as the takeoff and landing point for the aircraft during the study. During each run, the B-200 makes observations as it approaches a storm cell with a ground observer on the Cape collecting visual data on the same storm cell.

The initial study at KSC, which began in April, continues through the end of September.

Equal Opportunity administrator visits KSC

As part of a center-to-center orientation, Dr. Dorothy Hayden-Watkins, NASA's new assistant administrator for the office of Equal Opportunity programs, visited KSC.

Accompanying Jim Jennings, deputy associate administrator for Institutions and Asset Management, Dr. Hayden-Watkins briefed senior staff on NASA's new EO initiatives and policies, discussed her focus on diversity and toured the center.

Shared from NASA's Core Values, Mission and Goals, Dr. Hayden-Watkins reiterated, "people are NASA's greatest strength." She added that NASA employees are a team of highly qualified individuals that represent all levels of America's diversity, as they foster a culture of trust, respect, teamwork, creativity and empowerment.

She also unveiled the Code E mission statement and goals:

• To promote diversity and ensure equal opportunity for all, including minorities, women, and individuals with disabilities, in NASA employment and assisted and conducted programs and activities.

Dr. Dorothy Hayden-Watkins, NASA assistant for the office of Equal Opportunity programs

• To serve as a catalyst, advocate, and champion for a culture of awareness, understanding, and respect for people of diverse backgrounds, perspectives, and experiences.

• To promote a proactive, effective, and efficient work environment that addresses current and future equal opportunity, affirmative employment, and diversity issues and challenges.

• To support NASA in exceeding expectations as a world leader, not only in science and space exploration, but also in equal opportunity and diversity.

• To ensure the Office of Equal Opportunity Programs consistently offers timely, professional service and reliable technical assistance and information on equal opportunity, affirmative employment, and diversity matters.

• To collaboratively develop and implement an Agencywide equal opportunity and diversity strategic implementation plan.

Dr. Hayden-Watkins toured KSC with other NASA employees, including Fred Dalton (NASA Office of Equal Opportunity Programs), Brenda Manual-Alexander (NASA Discrimination Complaints Division), Karen Hickman (Instituitions & Asset Management) and Don King, EO manager, NASA Discrimination Complaints Division.

Expo 2003 scheduled for October at port

Expo 2003 is scheduled for Tuesday, Oct. 21 from 9 a.m. to 3 p.m. at Cruise Terminal 4 in Port Canaveral. The annual trade show sponsored by NASA-KSC Small Business Council, 45th Space Wing and the Canaveral Port Authority will feature over 200 businesses and government exhibits.

Representatives of NASA, the 45th Space Wing and prime contractors will be available to give out information and answer specific questions about doing business with their respective organizations.

In addition, the 2003 John F. Kennedy Space Center Contractor Awards will be presented to the KSC Large Business Prime Contractor of the Year (OAO Corp.), KSC Small Business Prime Contractor of the Year (Analex), NASA-KSC Small Disadvantaged Business Subcontractor of the Year (All Points Logistics) and more.

For additional information, visit **http://expo2003.ksc.nasa.gov** or call 867-7353.

Plant experiment helps provide air and water on ISS

Dwarf wheat plants successfully grown from seed aboard the International Space Station have boosted scientists' confidence that astronauts will be able to use plants to recycle air and waste water on long-duration missions, such as a trip to Mars.

That's because the wheat plants were able to clean air through photosynthesis and water through transpiration at the same rate as on Earth.

The wheat experiment results are important because spacecraft have only so much space to carry food, water and air.

"When astronauts go into space, they're basically on a camping trip. Supplies are taken up and garbage is brought back. For long-duration missions we will need to create a system that will replenish food, water and air through recycling," said Gary Stutte, principal investigator for NASA's Photosynthesis Experiment Systems Testing and Operations (PESTO) experiment.

Although many previous plant experiments on the Shuttle and Russian space station MIR have shed light on various aspects of plant behavior on orbit, the PESTO experiment was the first designed to show relatively long-term plant development and results replicated from multiple experiment trials.

Plant experiments aboard the Shuttle are typically limited by the short time the Shuttle is on orbit. Not much of a higher plant's lifecycle can be seen during a Shuttle flight, which makes the Space Station a critical research platform for life scientists.

"The experiment validated 30 years of ground-based plant research. We have been cultivating and testing plants for long-duration space travel based on the assumption that they would recycle air and water in microgravity in the same way they do on Earth," said Stutte, who also serves as supervisor for the plant research group of Dynamac Corp., the life sciences contractor for Kennedy Space Center.

The experiment was taken to the Space Station via the Shuttle on mission STS-110 and remained on orbit 73 days.

The plants were grown in containers specially designed to compensate for the low-gravity environment. Built by Orbitec of Madison, Wis., the Biomass Production System containers allowed the dwarf wheat to grow with controlled temperature, light, humidity, nutrients, water and air.

NASA's PESTO experiment will help replenish air and water aboard the ISS. Principal Investigator Gary Stutte shows dwarf wheat that has been grown from seed.

"We now know plants can grow normally in space because of the technology of these containers. That's an amazing breakthrough," said Terri Lomax, director of the Fundamental Space Biology Directorate at NASA Headquarters.

The Fundamental Space Biology Office at NASA's Ames Research System managed the project.

Scientists across the world continue to pour over the multiple wheat samples from the long-duration plant experiment. The samples are being analyzed on the cellular, molecular and genetic levels.

"What we have here is some very rare samples that will continue to feed our scientific knowledge about the nature of plants and the behavior of plants on orbit," Stutte said.

Next, Stutte and his associates hope to fly a longer dwarf wheat study that will allow the wheat to get to the seed phase.

TESTING . . .

(Continued from Page 1)

its kind to be performed in the SSPF, required assembly of an international and multi-organizational team at KSC well before the actual test.

The team comprised members from NASA's Marshall Space Flight Center, Glenn Research Center, Johnson Space Center and Dryden Flight Research Center in addition to the NASA and Boeing team members at KSC.

"Planning for the MEIT 3 began nearly five years ago," said Deborah Hahn, NASA-KSC Integrated Systems Test manager. "It was a learning process for our test team, both culturally and technically. We are proud and honored to have partnered with the Japanese Space Agency, NASDA, in the execution of this very important test to demonstrate the JEM Pressurized Module readiness to operate and interface to the Space Station on-orbit."

Hardware and software were procured from other NASA Centers as needed. Space agency teams from Canada, Italy and Japan were present to assist in the testing process, as well as flight crews from Japan and Brazil.

Ralph Fritsche, NASA test director for the MEIT, said, "We have demonstrated that people across the globe can work together and achieve great things. Despite our language and cultural differences we continued to work closely together in order to meet our shared goals."

Prior to the start of the MEIT, the team performed several tests and procedures to validate and confirm that the Node 2 and JEM KIBO modules were ready. During the MEIT, several cables were connected between the modules to provide electrical power in order to validate the compatibility of the systems.

Testing on Node 2 included emulating the Space Station on-orbit configuration, testing the command and track systems that support the audio and video systems on-orbit and the caution and warning systems that monitor life support systems in the module.

The Node 2 module was built by Alenia Spazio in Turin, Italy, under contract to the Italian Space Agency and led by a consortium of European subcontractors, and was recently signed over to NASA.

NASDA had previously transported its own test stand and associated ground servicing equipment to the SSPF highbay for use during pretest validations and MEIT on JEM Kibo. A water servicer was brought from Japan and used to cool the module during powerup and MEIT.

According to Chuong Nguyen, NASA-MEIT 3 project manager, NASDA transported the equivalent of 45 tractor-trailers of equipment to KSC, including the JEM Kibo and test stand. The JEM Kibo is one of four pieces that make up the Japanese Experiment Module.

"It has been extremely rewarding to see MEIT 3 come true after nearly five years of planning," said Nguyen. "It took significant efforts from all the team members to overcome the cultural challenges in dealing with the difference in language and philosophy between the American and Japanese team members."

When delivered to the Station, Node 2 will be attached to the U.S. Lab Destiny. Later, the JEM Kibo PM Module will be attached to Node 2.

Super Safety and Health Day, Combined Federal Campaign set for October

At this year's Spaceport Super Safety and Health Day on Oct. 15, KSC, CCAFS and PAFB employees can hear a presentation at the Training Auditorium by speaker Charlie Plumb. More than 4,000 audiences have listened to Charlie Plumb draw them in with his prisoner of war experience and the challenges of everyday life. He graduated from the Naval Academy at Annapolis, and went on to fly the F-4 Phantom jet on 74 successful combat missions over North Vietnam.

Plumb was shot down on his 75th mission, then captured and imprisoned. He spent the next six years in communist prison camps. He then worked in underground communications, and served as the chaplain in his camp.

Seating is limited, and the presentation will also be broadcast live on NASA Television. For more information on Spaceport Super Safety and Health Day, visit **http://www-ss.ksc.nasa.gov/supersafety2003/default.htm**.

The Combined Federal Campaign (CFC) is an annual fundraising drive carried out by Federal and military employees who raise millions of dollars to benefit non-profit charities. The goal for the 2003 KSC campaign, which runs from Oct. 1-31, is $280,000. This year's KSC-CFC chairperson is Susan Kroskey.

A kickoff rally will take place Oct. 1 in the Training Auditorium at 9 a.m. with presentations from Kroskey, Center Director Jim Kennedy, United Way of Brevard President Rob Rains, and more. The updated website (**http://cfc.ksc.nasa.gov**) gives details about changes within the donation process, including: Agency Searching, an Online Agency Book, Donating to the NASA Family Assistance Fund and other changes.

Each donation will make a difference. For example, a bi-weekly contribution of $4 fully immunizes five children in a developing country, decreasing the chances that they may need future medical aid. That same amount helps 20 families in South America overcome malnutrition by providing vegetable seeds yielding nutritious food. And $6 buys an acre of precious wildlife habitat, wetland or historical site.

Hurricane season peaks in September

We are now at the normal peak of hurricane season. Two tropical cyclones are in the Atlantic, including a tropical storm and powerful Hurricane Isabel eyeing the mid-Atlantic coast.

Kennedy Space Center can be affected by tropical cyclones, recently shown by a tropical storm cutting across Florida to our north, causing heavy rains.

Are you prepared to evacuate if a hurricane threatens the Space Coast? Dr. Gray at Colorado State University updated his forecast for the hurricane season and is calling for a slightly above average season that is 130 percent above normal activity. He is predicting 14 named storms (tropical storm or stronger), seven hurricanes and three major hurricanes (Category-3 or higher).

His last update for the 2003 hurricane season will be Oct. 2, and the official hurricane season runs June through November.

Lead time is everything when it comes to hurricane preparedness. You do not want to wrestle long lines at the hardware and grocery stores getting plywood and other supplies a day or two before the hurricane strikes.

You are much better off having all your plans and preparations ready early so you can beat the surge of traffic evacuating the coast. If you haven't already prepared, *now* is the time to get ready.

The KSC director and 45th Space Wing commander jointly declare Hurricane alert Conditions (HURCONs). The HURCON countdown to onset of 50 knot sustained winds, with HURON-4, -3, -2, -1 providing lead times of 72, 48, 24 and 12 hours, respectively.

The 45th Space Wing Weather Squadron also posts advisories when 35 knot winds will begin. Most outside work is no longer safe above this speed.

Individual offices have different actions they need to do at different HURCON conditions. These must be done in addition to preparing your home and family for possible evacuation.

Further information and training is available from the KSC Emergency Preparedness Office (853-6861) and 45th Weather Squadron (853-8410).

Kennedy addresses National Space Club

KSC Director Jim Kennedy was the keynote speaker of the September National Space Club luncheon and addressed the group about his transition into the new position and the activities taking place at NASA. The club also held its annual business meeting to recognize its new board and announced plans for the Oct. 25 Space Ball.

"I know I have a significantly responsible position, but the thing that gives me comfort and allows me to sleep at night is you. It feels good to be a part of your team," said Kennedy.

"KSC is in this Agency to support the operations of launching and landing the Space Shuttle, of launching Expendable Launch Vehicles, and processing our payloads, which for the most part is for the International Space Station."

The director then talked about the diversity at KSC and how he embraces it. Part of that is the One NASA concept, which will address the Columbia Accident Investigation Board's final report about cultural issues.

Spaceport Hispanic Heritage Month

Kennedy Space Center will observe Hispanic Heritage Month from Sept. 15 through Oct. 15 with the theme "One Culture, Many Races." The event reflects the extensive influence which diversity has contributed to KSC, NASA and the nation.

The Hispanic Employment Program Working Group will host its 18th annual Hispanic Luncheon at the Kurt Debus Conference Center on Oct. 3 from 11:30 a.m. to 1 p.m. Feasting on savory Hispanic food and live cultural entertainment will simmer up a festive environment. The guest speaker is Ramon (Ray) Lugo, deputy director, Launch Services Program. Bus transportation will be available to and from the event. Luncheon tickets can be purchased for $15 per person from fellow employees listed below (by building, room number and phone number): Joe Tellado - SSPF/3002Q: 867-6064; Pete Carrion – HQ/2215C: 867-0845; Rosaly Santos-Ebaugh - O&C/3035: 867-8402; Pete Rosado - OSB/5203B: 861-3648; Luis Saucedo - OPF/3092: 861-5969.

Columbia debris moves from hangar to VAB

Starting Sept. 15, members of the reconstruction team moved parts of Space Shuttle Columbia to the Vehicle Assembly Building (VAB) 16th floor 'A' tower for long-term preservation. The team is boxing and trucking the parts to the VAB very similar to the way the orbiter was brought from Barksdale, La., in large, tri-walled boxes.

The difference in the move to the VAB, according to NASA vehicle engineer Scott Thurston, is the parts are placed in tote trays, some multiple to a tote, so they are inventoried in each large container.

"The idea is to make the parts simple to locate for later retrieval if necessary," said Thurston. "The team has started placing the boxes and parts on flat bed trucks and moving them the 1.5 miles to the VAB. Piece by piece, box by box she will go up the elevator to the 16th floor."

The debris will be stored in a 6,800-square-foot room inside the VAB. The project is scheduled to be complete before Oct. 1. NASA has received approximately 20 proposals from researchers hoping to study the debris.

More than 83,000 pieces of debris were shipped to KSC during recovery efforts in East Texas and Louisiana. That represents approximately 38 percent of the dry weight of Columbia.

Reconstruction team members gather one last time in the Columbia Debris Hangar where items will be transferred to storage in the Vehicle Assembly Building. About 83,000 pieces were shipped to KSC during search and recovery efforts in East Texas.

IMPLEMENTATION

(Continued from Page 1)

striking the underside of the leading edge of the left wing, creating a breach that allowed superheated air to enter and destroy the wing structure during entry. To address this problem, NASA will identify and eliminate critical ascent debris and will implement other significant risk mitigation efforts to enhance safety.

Critical Ascent Debris

To eliminate critical ascent debris,NASA

• Is redesigning the External Tank bipod assembly to eliminate the large foam ramp and replace it with electric heaters to prevent ice formation.

• Will assess other potential sources of critical ascent debris and eliminate them. NASA is already pursuing a comprehensive testing program to understand the root causes of foam shedding and develop alternative design solutions to reduce the debris loss potential.

Enhancing technical excellence

The CAIB and NASA have looked beyond the immediate causes of the *Columbia* tragedy to proactively identify both related and unrelated technical deficiencies.To improve the ability of the Shuttle to withstand minor damage, NASA will

• Develop a detailed database of the Shuttle's thermal protection system, including reinforced carbon-carbon and tiles, using advanced nondestructive inspection and additional destructive testing and evaluations.

• Enhance our understanding of the reinforced carbon-carbon operational life and aging process.

• Assess potential thermal protection system improvements for Orbiter hardening.

NASA wants to hear from you about how we can best get the job done and will carefully consider all your comments. They can be submitted to a new email address: mailto:RTFsuggestions@nasa.gov.

NASA's Engineering and Safety Center (NESC) is one of several initiatives involved in returning the Shuttle to safe flight. Roe's presentation was to explain the NESC, how it will function within the Agency and encourage interest and participation in the new program.

During introductions, Center Director Jim Kennedy said, "I appreciate your interest in and support for what you're going to hear about today. Ralph is one of the best and is leading a critical program. The NESC will have a profound impact on all of us here at KSC and this Center will support this program 100 percent."

According to Roe, the NESC will focus on engineering excellence. "Safety starts with engineering excellence. The NESC will touch every aspect of the Agency."

NESC's purpose is to provide technical expertise to perform independent assessment of NASA's programs. The scope of the NESC will include independent, in-depth technical assessment, independent trend analysis, system engineering analysis, mishap investigations, and a focus on high-risk programs and projects.

NESC will offer processes such as independent technical assessment; technical inspections on a regular basis at all centers to check technical adequacy; and provide technical support on a limited basis. Also, select and prioritize projects; establish an NESC Review Board; capture knowledge; and improve communications.

During the presentation, Roe said that the NESC Charter was approved by the executive council, Aug. 1. An implementation plan was written and approved Sept. 15. "The NESC will be ready and operational by Nov. 1," said Roe. "Anywhere that the Agency does something high risk, we're going to provide independent technical assistance for the Agency."

The NESC will operate from Langley Research Center, with the 10 NASA centers reporting to it. For more information visit http://nesc.nasa.gov.

John F. Kennedy Space Center

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Managing editor. . . . . Bruce Buckingham
Editor. . . . . Jeff Stuckey

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